

Remarks

Applicant respectfully requests reconsideration. Claims 1-31 were previously pending in this application. By this amendment, Applicant has amended claims 23, 24, 30 and 31. Claims denoted as "Original" were present in the international phase at the time of entry into the US national phase. New claim 32 has been added, for which basis is provided on page 11, lines 19-22. As a result, claims 1-32 are pending for examination. No new matter has been added.

Rejections Under 35 U.S.C. §112, First Paragraph

The Examiner rejected claims 1-34 as not enabled by the specification. Applicant respectfully traverses the rejection.

The Examiner asserted that the specification does not enable the claims using materials other than described in the working embodiments, and that it would be unpredictable whether performing the invention in a different way than that shown in the working embodiments would work to obtain the desired results.

Applicant respectfully disagrees that the specification does not enable the full scope of the claims. Applicant has disclosed that several types of acids and hydrocarbons can be used in plasma polymers and copolymers to provide acid functionality. The disclosure must be viewed in the context of the knowledge of the person of skill in the art. To that end, Applicant notes that the Yanagihara patent discloses plasma polymerization and co-polymerization using a wide variety of hydrocarbons (see, e.g., col. 4, line 32 through col. 5, line 51) and acids (e.g., col. 6, lines 57-60). In addition, Yanagihara notes that the organic compounds can be used singly or in combination (see col. 7, lines 9-10). Therefore, based on this patent, it is evident the art was familiar with a variety of acids and hydrocarbons for use in plasma polymerization. Thus the claimed invention is enabled for use by one of ordinary skill in the art and the use of the compounds as disclosed and claimed by Applicant would not have been unpredictable.

Rejections Under 35 U.S.C. §112, Second Paragraph

The Examiner rejected claims 1-34 for a variety of reasons, including that the claims are indefinite for the use of the term "high acid functionality" and improperly multiply dependent. Applicant respectfully traverses the rejection.

The claims were amended during the international phase and also in a preliminary amendment filed on July 9, 2002 upon entry in the US national stage. As currently constituted, the claims require an acid functionality of at least 5%. Likewise, all improper dependencies were removed in the preliminary amendment. In addition, there are only 28 claims pending following the aforementioned amendments.

While Applicant appreciates the work the Examiner has undertaken to examine this application, it appears that the Examiner has examined the claims that were present in the PCT application as filed, but has not considered the two subsequent amendments.

Accordingly, Applicant respectfully requests that the rejection be withdrawn and that the Examiner examine the claims as now pending.

The Examiner indicated that the word “or” should be inserted in claim 9 before the word “epithelial”. Applicant previously amended claim 13, which has similar language, to insert the word “and” before “epithelial” in a listing of cell types.

Accordingly, Applicant respectfully requests that the rejection be withdrawn

The Examiner stated that claims 20, 29 and 32 contain zero as a lower limit. The pending claims that contain such limitations are 10, 19, 22-24, 26 and 29-31. Applicant respectfully disagrees with the Examiner that such claims are unclear. The claims simply state ranges, one end of which is a zero value. There is nothing unclear about this. For example, stating that 0-50% 1,7-octadiene is used in a process is not different than claiming that the process optionally uses up to 50% 1,7-octadiene. This type of claim limitation is valid, clear, and to Applicant’s knowledge permitted by the USPTO.

Accordingly, Applicant respectfully requests that the rejection be withdrawn.

The Examiner stated that claims 21-25 are unclear. Applicant again notes that the pending claims relate to vehicles for preparing a cell culture surface of a therapeutic vehicle. However, to the extent that the terms used in the rejected claims are used in pending claims, Applicant notes the following disclosures in the specification regarding therapeutic vehicles and matrix materials.

Therapeutic vehicles are clearly described in the application as “adapted to be applied and/or implanted into a patient requiring therapeutic tissue engineering” (page 11, lines 26-27).

A matrix material is described as “comprising a surface according to the invention to which is attached cells for use in surgical implantation procedures” (page 12, lines 2-3).

Because the specification clearly describes these terms, Applicant respectfully requests that the rejection be withdrawn.

The Examiner stated that claims 33 and 34 are unclear because they include ratios that include a zero value, and that “percentages” would be a more accurate term. These claims were previously canceled during the international phase, although similar claim limitations exist in pending claims 23, 24, 30 and 31. These claims have been amended to recite “percentages” instead of “ratios”.

Regarding the propriety of including a zero value, Applicant asserts that such terms are not unclear for the reasons noted above.

In view of the amendment of the claims, Applicant respectfully requests that the rejection be withdrawn.

Rejections Under 35 U.S.C. §102

The Examiner rejected claims 1-14 and 16-34 under 35 U.S.C. §102(b) as anticipated by the Daw et al. reference or the France et al reference. Applicant respectfully traverses the rejection.

As noted above, the Examiner appears to have examined claims from the PCT application as filed, but not the appropriate amended claim set.

The pending claims are directed to therapeutic vehicles for use in tissue engineering, not a cell culture surface. Considering the Daw and France references, it is apparent that these references do not disclose a therapeutic vehicle, because they do not teach or contemplate application and/or implantation of devices into a patient, and therefore do not anticipate the claimed invention.

Accordingly, Applicant respectfully requests that the rejection of the claims under 35 U.S.C. 102(b), as anticipated by the Daw et al. reference or the France et al reference, be withdrawn.

Rejections Under 35 U.S.C. §103

The Examiner rejected claim 15 as unpatentable over Daw et al. or France et al. in view of Yanagihara et al (US patent 4,693,799). Applicant respectfully traverses the rejection.

As noted above in connection with the anticipation rejection, neither the Daw reference nor the France reference describe the elements of the claimed invention. The Yanagihara patent does not remedy these deficits. Therefore, the combination of references asserted by the Examiner does not provide all of the elements of the pending claims.

Further, one of ordinary skill in the art would not look to the Yanagihara patent to supply the missing elements, because Yanagihara is directed to providing a plasma polymerized film to improve lubricity of sliding surfaces, such as video heads, magnetic tapes and magnetic discs (see Background of the Invention section). In contrast, Yanagihara describes nothing about therapeutic vehicles for use in tissue engineering that have a cell culture surface obtainable by plasma polymerization, to which at least one cell can reversibly attach, and which surface contains an acid functionality of at least 5%.

Thus, one of ordinary skill in the art would not be motivated to modify the Daw or France processes (which themselves are lacking elements of the claimed invention) by substituting propionic acid for plasma polymerization as taught by Yanagihara.

Accordingly, Applicant respectfully requests that the rejection of the claims under 35 U.S.C. 103 be withdrawn.

Double Patenting Rejections

The Examiner provisionally rejected claims 1-14 and 16-34 as unpatentable over co-pending application US 10/111,155 under the judicially created doctrine of obviousness-type double patenting.

Applicant respectfully traverses the rejection. As noted above, the claims pending in this application are not those examined by the Examiner. Applicant believes that when the Examiner considers the correct claim set that this rejection should be withdrawn, because the claims of the copending application are drawn to methods to treat a surface of an assay product comprising creating a plasma of an organic monomer by plasma polymerization; and coating the assay product surface with the plasma to provide an assay surface, wherein the plasma is created using a plasma power of <10W, as well as assay products comprising a surface produced by the method, and not to therapeutic vehicles for tissue engineering or their use as presently claimed.

The presently pending claims of this application are not obvious in view of the claims of copending application US 10/111,155. The copending claims are directed to assay surfaces, not therapeutic vehicles that can be implanted in patients. The Daw and France references do not supply elements missing from copending application US 10/111,155 nor motivation to modify the invention described in copending application US 10/111,155 in order to obtain the presently claimed invention.

Accordingly, Applicant respectfully requests that the Examiner withdraw the double patenting rejection of the claims as unpatentable over the claims of copending application US 10/111,155.

The Examiner provisionally rejected claim 15 as unpatentable over co-pending application US 10/111,155 under the judicially created doctrine of obviousness-type double patenting. The Examiner applies the Daw, France and Yanagihara references in combination with the co-pending application.

As noted above, copending application US 10/111,155 is directed to different and non-obvious subject matter as compared to the present claims. As also noted above, the Daw, France and Yanagihara references do not teach elements of the claimed invention. Further, it would not have been obvious to modify the teachings of the copending application US 10/111,155 based on the Daw, France and Yanagihara references in order to obtain the claimed invention.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,
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Docket No.: H0664.70002US00

Date: March 24, 2005

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